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(71) 出願人 (米国を除く全ての指定国について): 日本電信電話株式会社 (NIPPON TELEGRAPH AND TELEPHONE CORPORATION) [JP/JP]; 〒100-8116 東京都千代田区大手町 2 丁目 3 番 1 号 Tokyo (JP). エヌティエレクトロニクス株式会社 (NTT ELECTRONICS CORPORATION) [JP/JP]; 〒150-0043 東京都渋谷区道玄坂一丁目 1 2 番 1 号 Tokyo (JP).

(72) 発明者; および

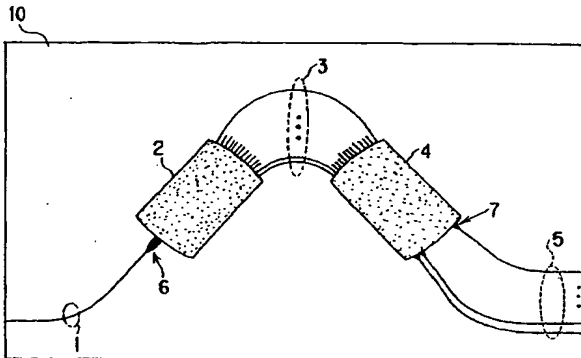
(75) 発明者/出願人 (米国についてのみ): 鬼頭 勤 (KI-TOH, Tsutomu) [JP/JP]; 〒180-8585 東京都武蔵野市緑町 3 丁目 9-11 NTT 知的財産センタ内 Tokyo (JP). 井上 靖之 (INOUE, Yasuyuki) [JP/JP]; 〒180-8585 東京都武蔵野市緑町 3 丁目 9-11 NTT 知的財産センタ内 Tokyo (JP). 井藤 幹隆 (ITO, Mikitaka) [JP/JP]; 〒180-8585 東京都武蔵野市緑町 3 丁目 9-11 NTT 知的財産センタ内 Tokyo (JP). 日比野 善典 (HIBINO, Yoshinori) [JP/JP]; 〒180-8585 東京都武蔵野市緑町 3 丁目 9-11 NTT 知的財産センタ内 Tokyo (JP). 金子 明正 (KANEKO, Akimasa) [JP/JP]; 〒150-0043 東京都渋谷区道玄坂一丁目 1 2 番 1 号 エヌティエレクトロニクス株式会社内 Tokyo (JP).

(74) 代理人: 谷 義一 (TANI, Yoshikazu); 〒107-0052 東京都港区赤坂 2 丁目 6-2 O Tokyo (JP).

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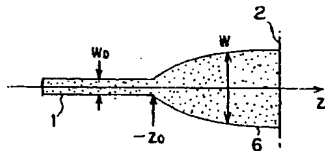
(54) Title: ARRAY WAVEGUIDE LATTICE TYPE OPTICAL MULTIPLEXER/DEMULTIPLEXER CIRCUIT

(54) 発明の名称: アレイ導波路格子型光合分波回路

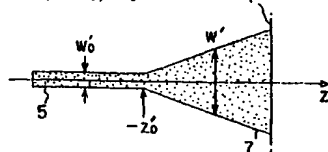


(57) Abstract: An array waveguide lattice type optical multiplexer/demultiplexer circuit in which wavelength dispersion is reduced. An input waveguide (1), a first slab waveguide (2), an array waveguide (3), a second slab waveguide (4) and an output waveguide (5) are connected sequentially. Furthermore, a parabola waveguide (6) is provided between the input waveguide (1) and the first slab waveguide (2), and a taper waveguide (7) is provided between the second slab waveguide (4) and the output waveguide (5). A parabola waveguide length  $Z_0$  exists in a range  $Z_{a,0} \leq Z_0 \leq Z_{p,0}$  determined by a parabola waveguide length  $Z_{a,0}$  where the ratio of absolute amplitude between the main peak and the first side peak in the field distribution of far-field of the parabola waveguide (6) has an upper limit of 0.217, and a parabola waveguide length  $Z_{p,0}$  where the relative phase of the main peak and the first side peak in the field distribution of far-field has a lower limit of 3.14 radian.

$$Z = A(W^2 - W_0^2) - Z_0$$



$$Z = A'(W' - W_0') - Z_0$$



(57) 要約: 本発明は、波長分散を低減したアレイ導波路格子型光合分波回路を提供する。入力導波路(1)と第1のスラブ導波路(2)とアレイ導波路(3)と第2のスラブ導波路(4)と出力導波路(5)が順次接続され、更に、入力導波路(1)と第1のスラブ導波路(2)との間に配置されたパラボラ導波路(6)と第2のスラブ導波路(4)と出力導波路(5)との間に配置されたテーパ導波路(7)とを有し、パラボラ導波路(6)の遠方界の電界分布のメイン・ピークと第1サイド・ピークの振幅絶対値の比が0.217を上限とするパラボラ導波路長  $Z_{a,0}$  と、遠方界の電界分布のメイン・ピークと第1サイド・ピークの相対位相が3.14ラジアンを下限とするパラボラ導波路長  $Z_{p,0}$  によって定められた範囲  $Z_{a,0} \leq Z_0 \leq Z_{p,0}$  にパラボラ導波路長  $Z_0$  が存在する。



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# INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> G02B6/12-6/14, G02B6/28-6/293, G02B6/34

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Toroku Jitsuyo Shinan Koho	1994-2004
Kokai Jitsuyo Shinan Koho	1971-2004	Jitsuyo Shinan Toroku Koho	1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	JP 7-333447 A (Nippon Telegraph And Telephone Corp.), 22 December, 1995 (22.12.95), Full text; all drawings (Family: none)	1-2

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/  
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Authorized officer

Facsimile No.

Telephone No.

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International application No.

PCT/JP03/17065

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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International application No.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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